

questions, though still insensible to pain. After the great muscular relaxation alluded to, some strong contractile efforts were subsequently made; the toes were flexed with considerable force, and the sterno-mastoid muscle was observed by Dr. Hargrave to be in a state of extreme rigidity.—*Dublin Medical Press*, Feb. 10, 1847.

OPHTHALMOLOGY.

48. *Foreign bodies in the Eye.*—Professor JACOB made a very interesting communication on this subject to the Surgical Society of Ireland, a report of which we transfer to our pages from the *Dublin Medical Press* of Dec. 9th, 1846.

The Professor states that "in breaking or dressing stones, it frequently happens to stone-cutters and others that a particle of the stone is driven with considerable force into the eye. This it was that happened in the case to which he was about to direct the attention of the society. A particle of stone had been so projected, and lay in the anterior chamber between the cornea and iris, but the interesting fact connected with this was that it should have remained in that situation for four years without having effected the destruction of the organ. He had extracted it the other day, and had every hope that he would ultimately be able to save the eye. The lens is opaque, and the pupil eccentric, and it will probably be yet necessary to break up the lens more effectually than could have been done in the course of the operation of removing the foreign body. In cases of this kind, those men must often suffer who are employed in dressing mill-stones, cutting or breaking silicious rocks; such accidents seldom occurring from cutting granite or limestone. The fragment in the present case was at least a fourth of an inch long and a sixth in diameter, and very sharp. Cases in which foreign bodies of this description had passed into the eye without destroying it, have (Professor Jacob observed) been recorded by Mackenzie, Lawrence, Wardrop, and others, so that, as he had before remarked, there was nothing very new in the case now before the society, but its pathological interest he considered of the first importance, showing as it does that when a foreign body of such a description finds its way into, and remains for such a lengthened period, in an organ of all others in the body so profusely supplied with nerves and vessels without causing its destruction, it need not to be considered necessary to search with such anxiety after foreign substances that find their way into other and so much less important parts of the body, under the apprehension that they will make their way eventually to the surface, instead of which they often remain at rest after a little time, if the part be kept quiet.

Another case had come under his care some years ago: it was that of a little boy into whose eye a portion of a copper gun-cap had passed through the pupil, and lodged in the crystalline lens itself, where it lay without producing any distress or mischief for two or three years. But the very curious fact connected with it was, that the copper never lost any of its metallic brilliancy, and never became even in the slightest degree corroded or oxidated. This case he temporized with, and the sequel proved very instructive: the lens became absorbed, and the bit of copper got entangled in the opaque capsule, and believing that it might not be possible to extract it, the patient being young and unmanageable, he still continued to temporize with the case, and lost sight of the boy for some time.

In about a year after, however, he again came under his notice, and now the copper cap had disappeared, and the anterior and posterior chambers were filled with blood, as if from some recent injury. The pupil was dilated, but the eye was spoiled. The cap being nowhere visible, it was probable that it had fallen to the bottom of the eye, so Professor Jacob considered it better to leave the eye alone, and the case was lost sight of. It is not alone in the anterior chamber, or in contact with the iris or crystalline lens, that bodies of this kind stick, but sometimes under the conjunctiva itself, though (Professor Jacob observed) from the toughness of the parts, it did not often happen; this, however, occurred in the case of a young lady, whose younger brother, in playing with a toy-gun, drove a portion of the cap into her eye, where it lay under the conjunctiva, its situation

being indicated by a small blackish tumour underneath that membrane. Having felt the little body with the point of a needle, he was enabled to remove it with the scissors without difficulty. In this case the foreign body had lain for nine months without producing any material mischief. Many instances are recorded in which bits of straw, pieces of rush, twigs, and such matters, become impacted and where (Professor Jacob observed) one would never suppose they could lie quietly for any time, and that not alone beneath the conjunctiva, but in the fold of reflection of this membrane to the upper lid. Here they sometimes lie without attracting any attention until the production of a fungous tumour over the foreign body brings the case under the notice of the practitioner. A gentleman presented himself under circumstances of this kind to him, and on attempting to remove the tumour with a fine pair of scissors, he found that he could not do so in consequence of some hard unyielding material, which he extracted after snipping off the tip, and which proved to be a portion of the flowering part of a rush half an inch long, which had probably been driven into the part some months before; the patient having had a fall from his horse in the field about that time.

Now, (Professor Jacob observed,) the question suggests itself as to how cases of this kind are to be dealt with; should they be temporized with? This he considers we are perfectly justified in doing if the body has lain quietly for a considerable time, and more especially, if it be exceedingly small; but if the foreign body is the source of a certain amount of irritation, the distress experienced will of course compel the surgeon at once to remove it. In the case first alluded to, and a specimen of which had been sent round, there had been, as he had stated, a great deal of inflammation, followed by an eccentric pupil and opaque lens, yet no shrinking of the eyeball or other indication of destructive inflammation. With respect to the mode of procedure for the removal of foreign bodies in the interior of the eye, Professor Jacob would recommend the method pursued in the case of the fragment in the anterior chamber, so little effusion or distress had followed upon it. In such a case it is supposed that it is only necessary to make an incision in the cornea, and let the foreign body pass out as the lens would in extraction; the operation is, however, attended with greater difficulty than might at first sight be expected.

In the first place, if recently lodged in the eye, a good deal of difficulty attends its extraction. It is stated by Lawrence, Tyrrel, and others—though he (Professor Jacob) was not satisfied of the fact—that these bodies become adherent, that they become imbedded or enveloped in lymph. This, to be sure, one might expect, arguing from what occurs in other parts of the body under similar circumstances, but such was not the result of his experience; for instance, in the case under consideration, the particle of stone was perfectly clean and as distinctly visible in the anterior chamber, as if placed for examination in a drop of water. There was positively no lymph coating either on the stone or in the case of the copper cap; indeed, he could not clearly see where the lymph was to come from; if lymph were shed, it would of course be the result of inflammatory action, and the foreign body would become adherent in consequence.

He would not, as he had said, deny that such might have occurred in other hands, but it was not so with him, and perhaps the statement was made by others under the conviction that a foreign body could scarcely remain in such a situation without becoming encysted. At the same time in the operation of extracting such substances it is well to be aware that they may be and probably often are adherent. In proceeding to extract them, as a general rule he would say, that the incision should be as large as possible, for the difference of mischief to the eye between a small and large incision, is as nothing compared with the difficulty of dragging the foreign body through a small orifice. This will more particularly be necessary if the foreign body be a stone, as happened in the case now described, in which it was only after a second or third time that Professor Jacob was enabled to extract it. Having waited between each attempt at extraction for the patient to become composed, and the spasmodic action of the muscles to subside, he was at length enabled to remove the fragment with the aid of the curette, and not without a good deal of force employed in disentangling it, for the little body was no doubt adherent, though not at all imbedded or encysted. Notwithstanding a good deal of violence having necessarily been employed, the case is going on

well, there being no inflammation, such as would lead to the destruction of the organ. The man has already so much vision as to satisfy Professor Jacob that ultimately the eye will enjoy a useful amount of it. At this stage of his remarks, Professor Jacob said, it became a question for consideration whether in cases of this kind seen immediately after the accident, the practitioner would proceed at once to the removal of the foreign body. By all means, he would say, if he sees the case in the course of the day upon which the mischief has been done, it ought, if possible, to be removed at once, and this may sometimes be effected with the greatest facility, while in other cases the greatest difficulty is encountered. Thus it will happen that to remove a body lying in the anterior chamber there is nothing to be done but to pass the knife, cut through the edge of the cornea, and the foreign body immediately drops out; but in other instances, in spite of the utmost caution, it falls backwards into a fold of the iris, and entirely disappears from view; following it, however, with the curette, the extraction may be effected, notwithstanding that the lids are squeezed up, and every effort made by the patient to turn the eye away from the operator. In this college, many years ago (Professor Jacob said) a case of this kind occurred in a pupil of the institution, who, while at work in the laboratory, had a splinter of glass driven into his eye from the bursting of a glass vessel. The particle passed through the cornea, and on seeing him immediately after, Professor Jacob observed the bit of glass lying in the anterior chamber, with one point resting against the cornea and the other against the iris. Having made a considerable opening with the extracting knife, the foreign body almost disappeared at first, having fallen into the fold of the iris, but with the curette he was fortunately enabled to lift it up, and the extraction was made without any subsequent injury to the organ. This case occurred in a gentleman who is at present a fellow of the college.

Professor Jacob next alluded to the minute foreign bodies which so frequently become fixed in the cornea, and which cause so much trouble to the practitioner in this country, where stone-cutting, quarrying, and stone-breaking, is so common; and when, as elsewhere, so many working at the anvil, bench, and lathe, are liable to such accidents.

The foreign bodies in these cases (Professor Jacob observed) are either particles of the steel of the instruments used by the workmen, or portions of the stone itself, but in nine cases out of ten they are particles of the steel, and it becomes of importance to ascertain in what state the steel is at the time. As regards the difficulty of removal, a great deal depends on the size of the particle, which is sometimes wonderfully minute, so much so as to become scarcely visible after a great deal of trouble and minute examination, and occasionally only with the assistance of a lens of two and a half inch focus, after twisting and turning the eye up and down, in and out, in all directions. Yet so small a particle will be productive of the greatest mischief. In general those particles may be removed with great ease, requiring only to be touched with the point of a blunt instrument very cautiously, such as the handle of a camel-hair pencil, pared down very fine, or the convex part of his own cataract needle. If only adherent to the conjunctival layer, the particle slips off by the gentlest means, and if that does not succeed, or if the foreign body is more deeply imbedded, if it has got into the structure of the cornea, its removal is more difficult. If the foreign body has been projected with violence, and has become imbedded in the cornea itself, it must be lifted out of it. The point of the needle should be held within a very short distance of the foreign body before it touches the cornea, waiting quietly until the eye becomes steady; it should then be struck in beneath it, and the particle dug up, if not detached by gentler means. The operator should never give up until he has fairly lifted it from its situation. Many surgeons at the other side of the water—among whom is so high an authority as Mr. Lawrence—recommend such cases to be left to nature, saying that a little spot of ulceration is formed round the foreign body which thus becomes washed away by the secretion of the tears; but this ulcer ultimately leaves behind it an opacity. As regards those cases in which small particles of steel have been projected into the cornea, and the particles so dissolved away that only a small portion of the oxide adheres to a speck of ulceration, this is to be removed with a few touches of the point of the needle, so as to prevent the occurrence of any permanent opacity. But of all circumstances connected with

this subject (Professor Jacob observed) that which is of paramount importance to the practitioner refers to the condition of his patient's general health at the time of the accident. In this country these accidents to the eye are in themselves generally trivial, but the worst results sometimes occur to the subjects of them from an unhealthy state of the constitution. He had known total blindness to occur in stone-breakers from this cause much oftener than would be believed. Even when the foreign body is got rid of a destructive inflammatory process is set up under these circumstances which ends in the loss of the eye. A whitish sloughy ulceration takes place in the injured part, purulent matter is deposited in the anterior chamber, and at last the sloughy ulceration extends through the cornea.

To prevent or remedy this, attention must be paid to the state of the digestive organs and health in general. A yellow coated tongue is a sure indication of that state of constitution in general, and gastric organs in particular, which leads almost with certainty to this state of things, and this must be remedied by the usual medicinal and dietetic remedies, recollecting that such cases seldom bear or require depletion.

49. *Remarkable case of Injury of the Eye.* By JAMES DIXON, Esq., (*Proceedings of Royal Medico-Chirurgical Society.*)—A woman received a blow with a fist on the left eye. The lids became much swollen, and she suffered great pain for some weeks, but she had no medical advice; and when she applied to me, eight months after the accident, all symptoms of inflammation had ceased.

The cornea was bright and clear, but all behind it was dark, and no iris was visible. On raising the upper lid, I noticed a slight mark, about half an inch long, just behind the upper edge of the cornea. It seemed as if the sclerotic had been divided there, and afterwards repaired by a substance rather less opaque than the original structure. Three or four little dots, like grains of gunpowder, appeared beneath the conjunctiva, close to the mark in the sclerotic.

The patient kept her hand over the injured eye, finding that otherwise the light dazzled it, so as to prevent her making good use of the sound one. By means of a convex glass, I threw light into the eye, to ascertain what had become of the iris: I could then look into the posterior chamber, and distinctly see the surface of the retina, but no vestige of iris could be discovered. A single upright image of a lighted candle reflected from the cornea, showed that the lens also was wanting.

Vision was limited to the perception of large objects. The patient could distinguish the outline of a sheet of paper, but could not see the letters printed upon it. I made her look through a magnifying-glass, and to her surprise, she could discern some of the larger capitals. I added to the glass a card perforated by a small hole, and she saw everything distinctly, and read easily a "hrevier" type.

It appears probable, therefore, that the blow which she received ruptured the coats of the eye, and at the same time completely detached the iris from the ciliary ligament; that the lens was dislocated, and escaped, with the iris, through the wound: and the rent in the sclerotic had afterwards healed up.

The most curious feature of the case is this:—that after so extensive an injury, the function of the retina should have been preserved; the vitreous humour, also, being so far retained, that the figure of the globe was but very slightly altered, and its bulk not visibly diminished.—*Lancet*, Dec. 5, 1846.

50. *On Obscurations of the Cornea in their Histological relations with reference to the Practice of Ophthalmic Surgery.* By Dr. SZOKALSKI.—The author shows in the first place, that the cornea is composed of three membranes: the epithelium or conjunctival layer, the cornea proper, and the membrane of Demours. He examines the alterations which the elements of these tunics may undergo, and thence draws some practical conclusions. In nebular obscurations he has seen the epithelial cells smaller, and their layers more compact and adhering more intimately to the proper cornea. Complete staphyloma of the cornea lies principally in an anormal development of the cells of the epithelium; the adherence of the iris to the cornea is not essential, for staphylomas are seen without this accompaniment. Conjunctival xerosis is an alteration of the epithelium analogous to that which constitutes pityriasis of the hairy scalp. The red points sometimes seen in inflammation of the cornea do not precede the development of